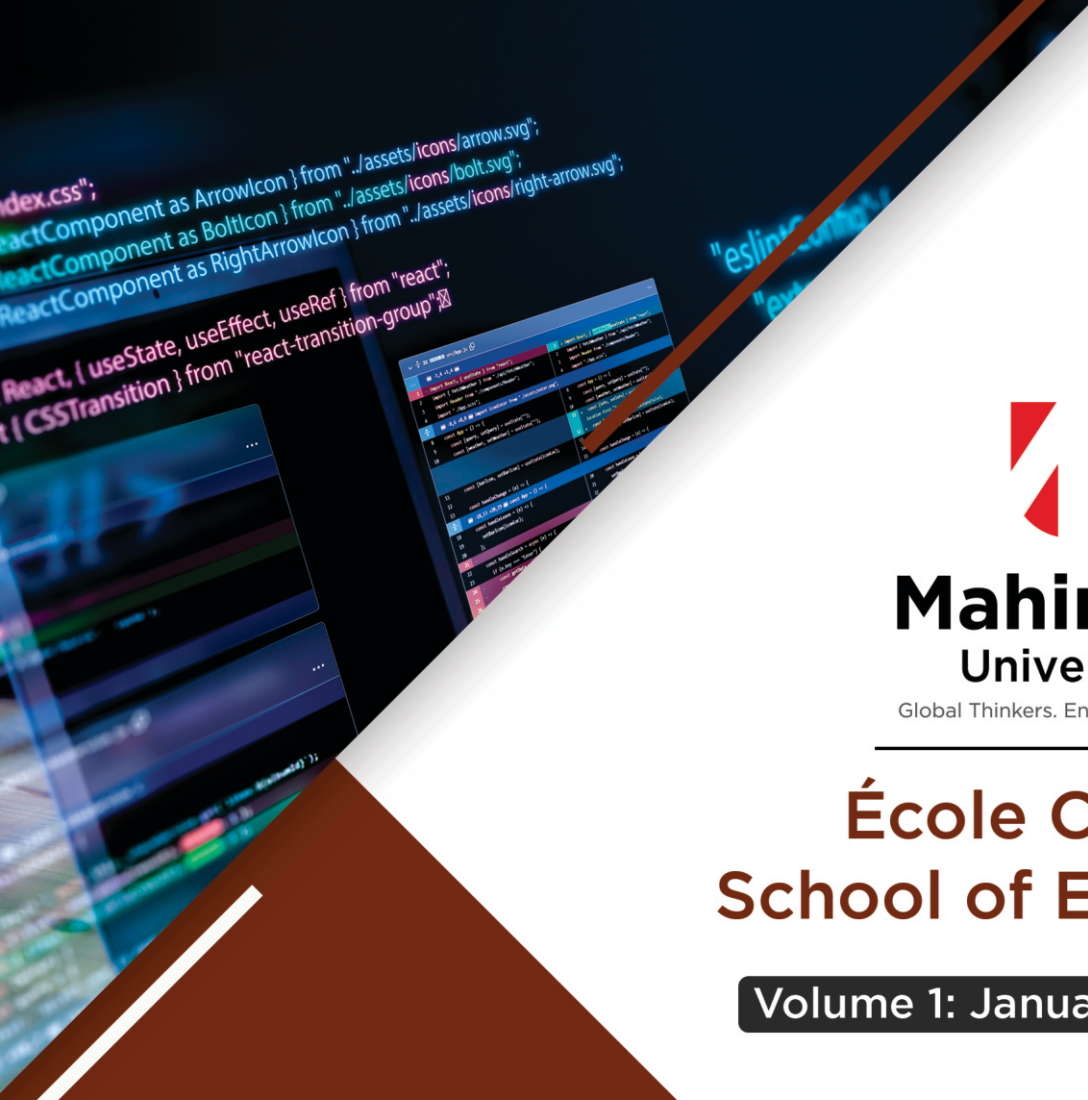

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École Centrale School of Engineering

Volume 1: January - June, 2024

DEPARTMENTS:

- ☞ Chemistry
- ☞ **Civil Engineering**
- ☞ Computer Science & Artificial Intelligence
- ☞ Electrical & Computer Engineering
- ☞ Humanities & Social Sciences
- ☞ Mathematics
- ☞ Mechanical & Aerospace Engineering
- ☞ Physics

ÉCOLE CENTRALE SCHOOL OF ENGINEERING

CIVIL ENGINEERING

EVENTS ORGANIZED

- A "Two Days" workshop - Hands on training with transportation software on 5th & 6th April 2024, was organized by the Transportation Engineering Unit. The workshop saw more than 30 participants from all over the country (includes undergraduates, postgraduates, research scholars, and faculty) who witnessed hands-on training and interaction with our faculty, Dr. Saladi SV Subbarao, Dr. Deepti Avirneni, Dr. Jahnavi Yarlagadda, and Dr. Sandeepan Roy.

- A Three-Day workshop and Training Program on “Building Better Designs: Integrating AI, BIM, and 3D Printing (3DBIMAI-2024)” was organized from 28th to 30th March 2024. 74 students from 21 Engineering Colleges and Universities across the country attended the program. The program included two lecture sessions by Dr. Sri Kalyana Rama Jyosyula and Dr. Venkata Dilip Kumar Pasupuleti on BIM and AI followed by hands-on sessions using ACCA tools and python from M.Tech students. The program also included a demo of 3D concrete printing.

  The participants were given a hands-on task, where they were divided into groups of four. Their objective was to develop a 3D model based on their ideas and creative thinking. The workshop concluded with a valedictory ceremony, during which certificates were awarded to the best performers of hands-on challenge

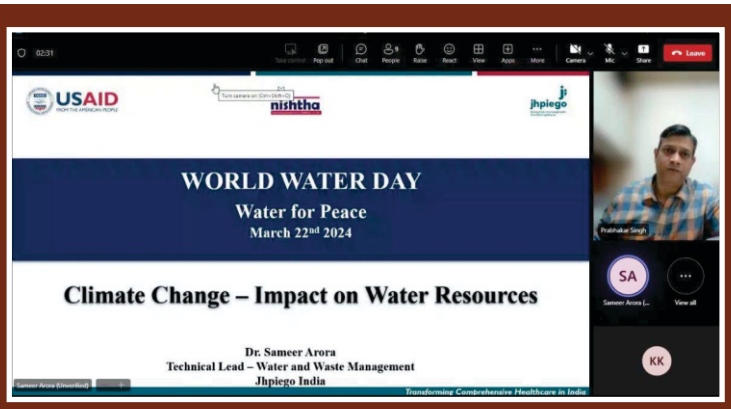


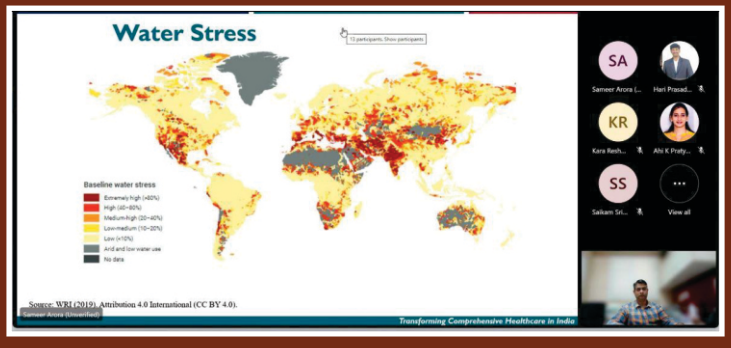






» On World Water Day (March 22nd, 2024), with the theme "Leveraging Water for Peace," a webinar was hosted featuring Dr. Sameer Arora, who shared valuable insights on the “Impact of Climate Change on Water Resources” and provided attendees from various backgrounds a deeper understanding of this critical issue. Dr. Arora discussed how climate change is altering the water cycle, increasing the frequency and intensity of extreme weather events such as droughts and floods, and impacting water quality and availability. He also highlighted the importance of sustainable water management strategies to mitigate the effects of climate change on water resources. Dr. Arora's talk serves as a stark reminder of the need for immediate action to address climate change and ensure water security for future generations.





PUBLICATIONS

Journals:

- Sidhu, R.D., Vamsi, K., Hariprasad, C., and Andrew, L. (2024). Performance of granular materials stabilized with multi-axial geogrid reinforcement. Indian Geotechnical Journal. https://doi.org/10.1007/s40098-023-00834-0

- Sidhu, R.D., Vamsi, K., Hariprasad, C., and Umashankar, B. (2024). Field Evaluation of Deformation Modulus of Geogrid and Geocell-Stabilized Subgrade Soil. KSCE Journal of Civil Engineering. https://doi.org/10.1007/s12205-024-2322-7

- Vamsi, K., Sidhu, R.D., and Hariprasad, C. (2024). Evaluation of geotechnical characterization of recycled sand as a sustainable replacement for natural sand. Journal of Material Cycles Waste Management. https://doi.org/10.1007/s10163-024-01981-z

- Sidhu, R.D., Prabodh, K.M., Vamsi, K., and Hariprasad, C. (2024). Comprehensive evaluation of strength parameters of soils by using DCP, DSCP, and LWD devices. International Journal of Geotechnical Engineering. Taylor & Francis. https://doi.org/10.1080/19386362.2024.2377449

- Vamsi, K., Prabodh, K. M., Sidhu, R. D., Amey, M., Hariprasad C. (2024). Large-scale direct shear testing for assessing shear parameters of natural and recycled sand with geosynthetic reinforcements. Construction and building materials. Elsevier. https://doi.org/10.1016/j.conbuildmat.2024.137598

- Biswarup Das, Kadali **B.R.,, Subbarao, SSV**, Jen-Jia Lin, (2024) "Are TOD and Travel Characteristics Influencing Residential Dissonance? An Analysis from a Developing Country's Perspective", Transportation Research Record, https://doi.org/10.1177/03611981241243325

- Ganta, Mounika, **Sri Kalyana Rama Jyosyula**, and Ramesh Baskar (2024). "An experimental investigation on the mechanical characteristics of steel fibre reinforced alkali activated concrete incorporating industrial and agro wastes." Innovative Infrastructure Solutions 9.5: 1-16.

- Md, Zoheb Nawaz, S. C. Mohan, and **Sri Kalyana Rama Jyosyula**. (2024) "Performance of low-cost unreinforced elastomeric isolator for masonry building: Experimental investigations and numerical analysis." Structures. Vol. 63. Elsevier.

- Ramesh Gomasa, **Visalakshi Talakokula**, Sri Kalyana Rama Jyosyula, and Tushar Bansal (2024), "Integrating Electro-Mechanical Impedance Data with Machine Learning for Damage Detection and Classification of Blended Concrete Systems", Construction and Building Materials Journal, Volume, August 2024, https://doi.org/10.1016/j.conbuildmat.2023.133179, ***Impact Factor: 7.69***

- Bansal, T., **Visalakshi Talakokula** and Saravanan, T.J (2024),"EMI-based monitoring of prestressed concrete beam under chloride-induced corrosion using an embedded piezo sensor", Measurement, Sensors, 101158, https://doi.org/10.1016/j.measen.2024.101158, ***Cite Score: 0.9***

- Tushar Bansal and **Visalakshi Talakokula (2024)**, "Comparative analysis of very-early age hydration process: LC3 vs. conventional and blended cement pastes using embedded piezo sensors", Measurement, Volume 229, April 2024, 114433. https://doi.org/10.1016/j.measurement.2024.114433, ***Impact Factor: 5.131***

- Kefei Li · Junjie Zeng..... Talakokula Visalakshi et al., (2024), "RILEM recommendation from TC 289-DCM: guideline for designing and operating long-term marine exposure sites", Materials and Structures (2024) 57:44 https://doi.org/10.1617/s11527-024-02319-9, ***Impact Factor: 3.427***

- Tarun Morwal, Tushar Bansal, Ammar Azam, **Visalakshi Talakokula** and T Jothi Saravanan (2024), "Exploring chloride-induced corrosion in reinforced concrete structures through embedded piezo sensor technology: an experimental and numerical study", Smart Mater. Struct. 33 (2024) 035039 (17pp). https://doi.org/10.1088/1361-665X/ad287a, ***Impact Factor: 4.1***

- Wani, F. M., & Vemuri, J. (2024). Shapelet-informed machine learning classifiers: A path towards precise identification of pulse-like ground motions. Journal of Earth System Science, 133(2), 96.

- Wani, F. M., Vemuri, J., Reddy, K. K., & Rajaram, C. (2024). Forecasting duration characteristics of near fault pulse-like ground motions using machine learning algorithms. Stochastic Environmental Research and Risk Assessment, 1-30.

- Neeraja, K, Wani FM, Reddy N, Vemuri, J., & Rajaram, C. (2024). Evaluation of constant ductility response spectra for the 1999 Chi-Chi earthquake. Current Science, 126(7), 837.

Conferences:

- Samuel Peter, **Subbarao, SSV** (2024) "Analyzing the impact of road geometry on Two wheeler driving behaviour", submitted to 10th Conference on Transportation Systems Engineering and Management (CTSEM 2024), 19th – 20th July 2024, VNIT Nagpur.

- A. K. Mangalampalli, Yeturi Pramod Kumar Reddy, Sri Kalyana Rama Jyosyula, and Visalakshi Talakokula (2024) "Sustainability of Iron ore over burden as filler and binder in conventional concrete" International Conference on Climate Resilient Infrastructures and Communities (INTERLINC)-2024, hosted by the Department of Civil Engineering Indian Institute of Technology (Banaras Hindu University), Varanasi and supported by the Shastri Indo-Canadian Institute, 28-30 March, 2024.

- Lakshmi Thotakura, **Ganesh Babu Kodeboyina, Deepthi Avirneni**, presented a paper on "Evaluation of Ultra-High Performance concrete using locally available Materials in India", 6th International Symposium on Ultra-High Performance Concrete and High-Performance Construction Materials for Sustainable Construction" (HiPerMat 2024), University of Kassel, Kassel, Germany, 4th to 6th March 2024.

- Reshma Kara, **Prabhakar Singh**, presented a paper on "Flood Assessment Lower Godavari Basin by using the application of GIS-based Analytical Hierarchy Process", 3rd International Conference on Recent Trends in Engineering, Technology and Business Management (ICRTETBM 2024) organized by Amity University during 21-23 February 2024.

- Pratyusha Tatavarthi, **Jayaprakash Vemuri** and Prabhakar Singh presented a paper on 'Reservoir Outflow predictions using Adaptive Neuro Fuzzy Interface System', 3rd International Conference on Recent Trends in Engineering, Technology and Business Management (ICRTETBM-2024) organized by Amity University during 21-23 February, 2024 (Conference).

Book Chapter:

- **Rama, J.S.K.**, Lakshmi, C.P., Likhitha, G., Sahithi, I.T. and Sri, K.H.R., 2024. Architectural and Structural Configurations for Enhanced Seismic Performance of RC Structure Using Integrated Building Information Modelling. Recent Advances in Civil Engineering for Sustainable Communities: Select Proceeding of IACESD 2023, 459, p.177.

PATENTS

- Title: High Performance Plaster Coated Light Weight Composite Wall Panels Inventors: **Yeturi Pramod Kumar Reddy, Sri Kalyana Rama Jyosyula, Visalakshi Talakokula**, Sagi V Simhadri Raju
  Status: Granted on 05/01/2024 bearing patent no. **495454** for a term of **20** years from **10/10/2022**

- Title: PZT-Based Smart Washer for Structural Health Monitoring of Bolted Joint Steel Structures
  Inventors: **Vigneshwar S, Visalakshi Talakokula, Sri Kalyana Rama Jyosyula**
  Status: Published on **12/01/2024**

EXTERNAL FUNDING PROJECT/CONSULTANCY

- Sri Kalyana Rama Jyosyula and Visalakshi Talakokula received external funding for a research project on “From Laboratory to Field: Investigating the Mechanical and Durability Behaviour of Ultra-High-Performance Concrete Systems with Graphene Oxide” sponsored by Carborundum Universal Limited-CUMI Murugappa, Kerala and Mahindra University.
- Hariprasad Chennarapu, Deepti, and Vamsi.k (Ph.D. student) received from Coalition for Disaster Resilient Infrastructure (CDRI) fellowship grant of $15,000 USD for the project on Evaluation and Assessment of Geothermal Pavements using C&D Waste with Mechanical Stabilization.

FACULTY AWARDS/ACHIEVEMENTS

- Sri Kalyana Rama Jyosyula has been nominated by the Bureau of Indian Standards as a technical expert on Risk Management for the MSD 17-Risk Management, Security, and Resilience Sectional Committee.
- Sri Kalyana Rama Jyosyula has been nominated by the Bureau of Indian Standards as a technical expert on Building Information Modeling for the CED 29-Construction Management Sectional Committee. He will contribute to WG15-Working Group for Scope and Roadmap on Digitalization and CED 29/P3/WG4 Working Group.
- Visalakshi Talakokula :BIS committee member of Prefabricated Construction Sectional Committee, CED 32 and Timber, CED 46:P6

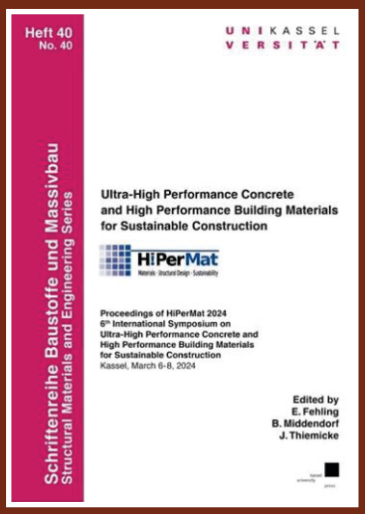
STUDENT'S MAJOR ACHIEVEMENTS

- Mr. Samuel Peter (Research Scholar) awarded a grant from IIIT Hyderabad under *i*-HUB Data Mobility Fellowship for a period of one year for conducting research on "Analyzing the distractive driving behaviour of Two Wheelers using DMS"

- Mr. Yeturi Pramod Kumar Reddy (Research Scholar), along with Dr. Sri Kalyana Rama Jyosyula, Prof. Visalakshi, and industry expert Mr. SVS Raju, have incorporated a startup, Precastelite Confab Private Limited, with support from AIC Mahindra and Mahindra University.

- Mr. Anil Kumar Mangalampalli and Mr. Yeturi Pramod Kumar Reddy received the best presentation award for their paper on "Sustainability of Iron ore over burden as filler and binder in conventional concrete" at the inaugural International Conference on Climate Resilient Infrastructures and Communities (INTERLINC)-2024, hosted by the Department of Civil Engineering Indian Institute of Technology (Banaras Hindu University), Varanasi and supported by the Shastri Indo-Canadian Institute, 28-30 March, 2024.

- Ms. **Lakshmi Thotakura** has developed an Ultra-high performance concrete (UHPC) with a remarkable strength of about 190 MPa. She presented her work at the "6th International Symposium on Ultra-High Performance Concrete and High-Performance Construction Materials for Sustainable Construction" (HiPerMat 2024), where her presentation, titled "Evaluation of Ultra-High Performance Concrete Using Locally Available Materials in India," emphasized the potential of using indigenous materials to achieve such high-performance standards. The HiPerMat symposium, held every four years, is a pinnacle event in the realm of Ultra High Performance Concrete research, with a legacy spanning two decades. This year's symposium featured contributions from 18 countries, with 65 distinguished papers presented. It is particularly noteworthy that Ms. Lakshmi's research, achieving a compressive.



FACULTY ENGAGEMENT

- A talk on “Transportation Data Analysis using Advanced methods in particular to Activity data collection and advanced activity based modelling” as a part of a One Week High-End Workshop on “Training on Advanced Methods for Transportation Data Analysis (AMTDA)” organized by the Transportation Division, Department of Civil Engineering, NIT Warangal from 11th – 17th, March 2024 sponsored by SERB
- A talk on “Advancements in Travel Demand Modelling” as a part of as a part of a One Week Faculty Development Program on Advanced Techniques in Civil Engineering (ATCE 2024) organized by the Department of Civil Engineering, Anurag University in collaboration with Center of Excellence – Environmental Sustainability, CED, AU, July 8th – 12th, 2024.
- Dr. Sri Kalyana Rama Jyosyula delivered a talk on "Embodied Carbon Calculation for Various Life Cycle Stages of a Building with Different Raw Materials" as part of the Residential Training Program on "Clean-Build: Pathways to Decarbonize the Built Environment," organized by the Centre for Science and Environment, New Delhi, from 23/04/2024 to 26/04/2024.
- Dr. Sri Kalyana Rama Jyosyula delivered a talk on " Nature Inspired configurations for an enhanced Infrastructural Development using Building Information Modeling” as part of the Three Day Residential (DoPT) Training program on “Engineering Building with Nature” organized by the Andhra Pradesh Human Resource Development Institute, Bapatla, Andhra Pradesh from 22/02/2024 to 24/02/2024
- Dr. Sri Kalyana Rama Jyosyula delivered a talk on " Building Information Modeling for Entrepreneurs” as part of the Webinar organized by the Consatruction Management Training Institute, Bengaluru on 20/04/2024.
- Dr. Sri Kalyana Rama Jyosyula delivered a talk on " Use of Recycled Materials in Concrete Technology and Enhancing Concrete Structural durability with Advanced Construction Material” as part of the One Day Workshop on "Advanced Construction Materials in Concrete Technology and Its Applications" organized by Engineering Staff College India, Hyderabad on 05/06/2024.
- **Prof. Ganesh Babu Kodeboyina** delivered a talk on “Heritage Structures” at the “Condition Assessment & Mapping of Heritage Structures (CAMHS 2024) Workshop,” organized by the Dharohar Club. The event took place on April 27th at Matrusri Engineering College in Hyderabad.
- **Prof. Ganesh Babu Kodeboyina** played a significant role in the International Conference on Materials Innovation and Sustainable Infrastructure (ICMISI-2024), Organized by Vishnu Institute of Technology, Bhivaram, A.P. held on February 2nd & 3rd, 2024. He served as the **Editor** for the conference proceedings, which were published in the *Journal of Physics: Conference Series* (Volume 2779, 2024), with the *https://doi.org/10.1088/1742-6596/2779/1/011001*
- **Prof. Ganesh Babu Kodeboyina** contributed to the International Conference on Materials Innovation and Sustainable Infrastructure (ICMISI-2024) as a member of the **Advisory committee** and delivered a Keynote lecture, demonstrating his expertise in materials innovation and sustainable infrastructure. The conference was organized by Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh.

RECOGNITION TO THE DEPARTMENT

MOU's:

MU& EADIC

In the interest of the acceleration and transformation of engineers into high-impact professionals, adapted to technological trends and cutting-edge knowledge in the AEC industry, Mahindra University has signed a collaboration agreement with EADIC, an institution with an international presence in America, Asia, and Europe. For over 12 years, EADIC has had the mission of turning architects & engineers into well-rounded professionals prepared to lead projects globally through a wide range of more than 41 executive programs with double certification. Thanks to this agreement, the community will have access to globally recognized postgraduate programs in BIM methodology and immersive technologies. Furthermore, AEC professionals will be able to experience practical learning with a multicultural focus through the in-person weeks in Madrid, Milan, and Dubai offered by EADIC and very soon also in India."

- Prof. Visalakshi Talakokula has been elected as governing council member of Indian Concrete Institute